



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/533,169

04/17/2006

Takeaki Saiki

71051-008

9218

27305

7590

04/28/2008

HOWARD & HOWARD ATTORNEYS, P.C.
THE PINEHURST OFFICE CENTER, SUITE #101
39400 WOODWARD AVENUE
BLOOMFIELD HILLS, MI 48304-5151

EXAMINER

DOLLINGER, MICHAEL M

ART UNIT

PAPER NUMBER

4171

MAIL DATE

DELIVERY MODE

04/28/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/533,169	Applicant(s) SAIKI ET AL.	
	Examiner MICHAEL DOLLINGER	Art Unit 4171	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04/29/2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/25/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 4 and 9 are objected to because of the following informalities: Line 6 of claim 4 and line 14 of claim 9 contain the phrase "R² is a monovalent hydrocarbon group, other than the one." It is unclear what the phrase "other than the one" refers to. For purposes of examination, examiner takes the position that the phrase "other than the one" refers to the monovalent hydrocarbon group with 1 to 10 carbon atoms that describes R¹. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

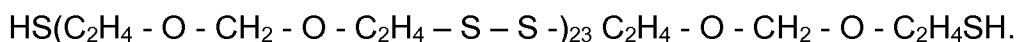
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Millen (US 3,476,826).

3. Applicants claim a method of preparing a polysulfide-type polymer having an organosilyl group characterized by mixing (A) an organosilane containing at least one branch with aliphatic unsaturated bonds, (B) a polysulfide polymer having molecular terminal capped with mercapto groups, (C) a nitrogen-containing base, and (D) sulfur.

Art Unit: 1796

4. Example 1 of Millen discloses a method of preparing vinyl triethoxy silane polysulfide by mixing (A) vinyl triethoxy silane (column 5 lines 31-32) and (B) a polysulfide polymer (column 5 lines 24-30) having essentially the structure

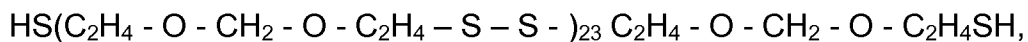


This vinyl triethoxy silane polysulfide is usable as an adhesive additive or primer composition for a high rank sulfur polysulfide polymer based adhesive composition (column 1 lines 57-62).

5. Regarding claims 7 and 10, applicants claim carrying out the mixing of components (A) to (D) at a temperature with a range from room temperature to 200°C. Example 1 of Millen is carried out at 110°C (column 5 line 33).

6. Example 1 in Millen does not disclose a mixture including (C) a nitrogen containing base and (D) sulfur.

7. Example 2 in Millen discloses a method of preparing a high sulfur rank polysulfide polymer by mixing paraformaldehyde with (B) a polysulfide polymer (column 5 lines 24-30) having essentially the structure



(C) triethylamine and n-dibutylamine, and (D) sulfur. The process is carried out at 23-53°C (column 5 lines 58-59) and the triethylamine is used to block the mercapto groups in order to allow the sulfination of the polymer to take place (column 5 lines 52-53). High sulfur rank polysulfide polymers are well known in the art as effective sealants and adhesives (column 4 lines 39-48). In the subsequent Examples 3 – 10, Millen combines the high sulfur rank polysulfide polymer of Example 2 with the vinyl triethoxy silane

Art Unit: 1796

polysulfide of Example 1 to make a sealant applied to substrates of glass and aluminum.

8. Regarding claims 5 and 10, applicants claim carrying out the mixing of components (A) to (D) in an atmosphere of inert gas. The reaction in Example 2 of Millen is carried out under an atmosphere of nitrogen (column 5 line 57-58).

9. Regarding claims 7 and 10, applicants claim carrying out the mixing of components (A) to (D) at a temperature with a range from room temperature to 200°C. Example 2 of Millen is carried out at 23-53°C (column 5 line 58-59).

10. It would have been obvious to one of ordinary skill in the art to have combined the elements (A), (B), (C), and (D) of the mixtures in Examples 1 and 2 of Millen into one mixing process because Example 1 teaches it is within the skill of the art to mix (A) an organosilane having an aliphatic unsaturated bond on one substituent with (B) a polysulfide polymer at a maximum temperature of 110°C in order to obtain a organosiloxane terminated polysulfide polymer useful as an adhesive additive and Example 2 teaches it is within the skill of the art to mix (B) a polysulfide polymer, (C) a nitrogen-containing organic base, and (D) sulfur at a temperature between 23-53°C in order to obtain a high sulfur rank polysulfide polymer useful as a sealant. One would have combined the elements (A), (B), (C), and (D) into a single reaction mixture 1) carried out the sulfination reaction at a temperature of 23-53°C for 3 hours and 2) carried out the silanation reaction by heating to a maximum temperature of 110°C in order to obtain the expected result of a single polymer composition that is both high sulfur rank and organosiloxane terminated so that the polymer is effective as a sealant

on glass and metal substrates. A sealant of a single polymer would have expected benefits over a polymer mixture, including improved adhesion to a substrate due to higher proportion of organosiloxane terminals that act as coupling agents and improved cohesion within the sealant. Absent any evidence to the contrary, there would have been reasonable expectation of success of an improved sealant composition through the combination of the mixtures taught in Examples 1 and 2 in Millen.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL DOLLINGER whose telephone number is (571)270-5464. The examiner can normally be reached on M-Th7:30-5:00, every other F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MICHAEL DOLLINGER
Examiner
Art Unit 4171

/MMD/
| /Ling-Siu Choi/
| Primary Examiner, Art Unit 1796